IN THE CLAIMS:

1. **(Currently Amended)** A material model ~~comprising~~ for a set of microstructural entities in a surrounding matrix material being initially in equilibrium prior to application of an applied load comprising grains, particulates and particles each being aligned ~~in such a way~~ at a corresponding angle with respect to the applied load such that in response to the applied load each of said entities rotates though ~~an~~ a corresponding angle to remain in equilibrium and to ~~thereby creates~~ create induced stresses ~~on~~ in surrounding matrix material and in ~~its~~ the interior of the corresponding entity that arise from ~~the~~ strain on the matrix material resulting from the ~~through said~~ rotation of the entity.

2. **(Currently Amended)** The material model ~~as~~ defined in claim 1, wherein said microstructural entities, ~~that~~ through said rotation create ~~from the resulting strain in the surrounding matrix material~~ alternating regions of compressive and tensile stress in both the matrix material and in the interiors of the said microstructural entities ~~that then~~ which add ~~to~~ ~~the original~~ existing stresses around cracks, pores and particles to produce attenuated stresses and strain energy around said cracks, pores and particles.

3. **(Currently Amended)** The material model as defined in claim 1, wherein said particles are smaller than said grains and particulates, said smaller particles undergoing a rotation to remain in equilibrium ~~themselves~~ within ~~the~~ tensile stress fields induced by ~~the~~ relatively larger

grains ~~themselves through~~ by strain put on the surrounding matrix through said rotation from the applied load.

4. **(Currently Amended)** The material model as defined in claim 1, wherein said particles are smaller than said grains and particulates, said ~~smaller~~ particles taking on one of its sides one of the induced compressive stresses from the strain in the matrix arising from the rotation of the ~~said~~ larger grains and particulates and transmitting the compressive stress through its interior and out its other side as a point source in which the attenuation of the compressive stress changes ~~from~~ its dependence on a function having a series of terms including r^{-n} ~~dependence upon~~ to r^{-1}, where r is a distance to the particles and n is r when n>1,~~from a n-power in several terms to that of a power of 1.~~

5. **(Original)** The material model as defined in claim 1, wherein said microstructural entities create through strain in the matrix and in their interiors through rotation alternating regions of tension and compression that serve as initial conditions for vibrational motion in the composite material lattice that serves to absorb strain energy whose release could promote crack propagation.

6. **(Currently Amended)** The material model as defined in claim 1, wherein said applied stress comprises tensile stress.

7. **(Currently Amended)**The material model as defined in claim 1, wherein said applied stress comprises compressive stress.

8. **(Currently Amended)** The material model as defined in claim 1, further including a net moment as a sum of M_0 from the applied load

and M_{ex} from the stress fields from other microstructural entities, wherein said rotational movement includes a direction of rotation, said direction being dependent upon the orientation of said microstructural entities with respect to the local applied load such that said net moment on each entity is zero.